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UNIVERSITY OF CALIFORNIA,
BERKELEY, CALIFORNIA.

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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project	Date	Author

SUBJECT—

TITLE

FOREST INSECT RECONNAISSANCE

NORTH COAST FORESTS, CALIFORNIA REGION

Including Mendocino, Trinity and Klamath National Forests

September 1939

JM
MLL
KAS
JES
GPS
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ETG
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ELS

by
J. E. Patterson
Berkeley, California
January 13, 1940

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FOREST INSECT LABORATORY
BERKELEY, CALIFORNIA
JANUARY 13, 1940

FOREST INSECT RECONNAISSANCE

NORTH COAST FORESTS, CALIFORNIA REGION

INCLUDING MENDOCINO, TRINITY AND KLAMATH NATIONAL FORESTS

SEPTEMBER 1939

APPROVED BY:

J. M. MILLER
SENIOR ENTOMOLOGIST, IN CHARGE

SUBMITTED BY:

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ASSOCIATE ENTOMOLOGIST

FOREST INSECT SURVEY - NORTHWEST COAST FORESTS, CALIFORNIA REGION

SEASON OF 1939

DURING THE LATTER PART OF THE 1939 FIELD SEASON A RECONNAISSANCE TO OBSERVE FOREST INSECT CONDITIONS IN THE NORTH COAST REGION OF CALIFORNIA WAS MADE BY ASSOCIATE ENTOMOLOGIST PATTERSON AND ASSISTANT ENTOMOLOGIST YUILL OF THE FOREST INSECT LABORATORY, BERKELEY. THE FIELD TRIP WAS MADE DURING THE PERIOD SEPTEMBER 10 TO 24, 1939.

THIS SURVEY WAS CARRIED OUT BY AUTOMOBILE TRAVEL ALONG THE MANY ROADS TRAVERSING THE TIMBERED AREAS AND BY TOPOGRAPHIC VIEWING FROM THE LOOKOUTS AND OTHER VANTAGE POINTS WITH WHICH THIS REGION IS AMPLY PROVIDED. SUFFICIENT GROUND WORK WAS DONE TO DETERMINE THE NATURE OF THE INFESTATIONS AND THE SPECIES OF INSECTS RESPONSIBLE FOR THE DAMAGE.

THE TERRITORY COVERED BY RECONNAISSANCE METHODS EXTENDED FROM CLEAR LAKE NORTH TO THE CALIFORNIA-OREGON BOUNDARY, AND FROM THE SHASTA AND SACRAMENTO VALLEYS WEST TO THE REDWOOD-FIR COAST TYPE. IT INCLUDED PRIMARILY THE PONDEROSA PINE - DOUGLAS FIR TYPE ON BOTH SIDES OF THE COAST RANGE. THE ROUTES OF THE RECONNAISSANCE ARE SHOWN IN RED LINES ON THE MAP IN THE APPENDIX.

BECAUSE OF THE NATURE OF THE INFESTATION IN THIS REGION, AND THE TYPE OF SURVEY MADE, NO ATTEMPT WAS MADE TO ESTABLISH INFESTATION UNITS, OR OTHERWISE ARBITRARILY SECTIONIZE THE TERRITORY. FOR PURPOSES OF REPORTING ON THE INFESTATIONS RELIANCE IS PLACED UPON WATERSHEDS AND TIMBER TYPES. FOR INSTANCE THE KLAMATH RIVER DRAINAGE IS CONSIDERED A SUBREGION DISTINCT FROM THE ADJOINING SCOTT VALLEY AREA AND INFESTATION CONDITIONS ON IT ARE GIVEN SEPARATELY. ALL OTHER SUBREGIONS ARE HANDLED IN THE SAME WAY. THIS RECONNAISSANCE CONSISTED OF OBSERVATIONS ALONG THE MAIN TRAVEL ROUTES AND FROM LOOKOUTS OVER AN AREA OF 5,350,000 ACRES OF FORESTED LANDS IN THE MENDOCINO, TRINITY AND KLAMATH NATIONAL FORESTS.

GENERAL INFESTATION CONDITIONS

INSECT CONDITIONS DURING THE YEAR WERE GENERALLY FAVORABLE. THE AMOUNT OF TIMBER KILLED SHOWED A SUBSTANTIAL REDUCTION FROM PREVIOUS YEARS. THE BARKBEETLE SITUATION HAS BEEN GRADUALLY IMPROVING SINCE THE LAST EPIDEMIC WHICH OCCURRED DURING THE PERIOD 1932-1934. AREAS THAT WERE SEVERELY DAMAGED AT THAT TIME HAVE LARGELY RECOVERED BUT THE GREATEST CURRENT INFESTATIONS STILL PERSIST ON THESE SITES. BARKBEETLE LOSSES ARE LARGELY CONFINED TO PONDEROSA PINE AND TO SUGAR PINE. IT CAN BE DEFINITELY STATED THAT THESE LOSSES ARE CURRENTLY LESS THAN HAVE OCCURRED AT ANY TIME DURING THE PAST TEN YEARS.

THE SPECIES OF BARKBEETLES THAT ARE CURRENTLY ACTIVE ARE THE WESTERN PINE BEETLE (DENDROCTONUS BREVICOMIS), THE MOUNTAIN PINE BEETLE (DENDROCTONUS MONTICOLAE), IPS SPP., AND FLATHEADS (MELANOPHILA).

DEFOLIATING INSECTS HAVE BEEN MUCH MORE ACTIVE DURING THE YEAR. THE SILVER SPOTTED HALISODOTA (HALISODOTA ARGENTATA) BUILT UP AN INFESTATION OF EPIDEMIC PROPORTIONS IN THE LOWER TRINITY RIVER DRAINAGE DURING THE SPRING PERIOD. DURING THE SEASON THIS AGGRESSIVE INFESTATION SPREAD OVER AN AREA OF ABOUT 60,000 ACRES OF DOUGLAS FIR TIMBER ON THE HEADWATERS OF NEW RIVER. THIS INSECT IS A DESTRUCTIVE DEFOLIATOR WHEN IT DEVELOPS EPIDEMIC INFESTATIONS SUCH AS THIS ONE WAS. THE TREES ON THE INFESTED AREA WERE LARGELY STRIPPED OF NEEDLES WITH THE RESULT THAT BETWEEN 20% AND 30% OF THEM IMMEDIATELY DIED. THE END RESULT WILL NO DOUBT SHOW A HIGHER MORTALITY. ITS INFESTATIONS ARE USUALLY SPORADIC IN NATURE; LASTING FOR ONLY ONE OR TWO SEASONS, SO THAT DAMAGE IS NOT USUALLY REPEATED AFTER THE SECOND YEAR. SPRAYING THE INFESTED TREES WITH A CONTACT INSECTICIDE OR STOMACHE POISON DURING THE LARVAL PERIOD ARE DIRECT CONTROLS BUT ARE HARDLY PRACTICABLE FOR REMOTE INFESTATIONS UNDER NORMAL FOREST CONDITIONS.

ANOTHER DEFOLIATOR WHICH WAS FOUND TO BE PRESENT THROUGHOUT THE REGION IS THE FALL WEBWORM (HYPHANTRIA CUNEA). THE INFESTATIONS OF THIS INSECT EXTENDED FROM MT. ST. HELENA NORTH TO THE SISKIYOU MOUNTAINS AND FROM THE OPEN VALLEYS OF SACRAMENTO AND SHASTA WEST TO THE COAST. THE INFESTATION WAS MODERATE BUT GENERAL OVER THIS IMMENSE AREA. A FEW LOCAL AREAS WERE FOUND WHERE THE INFESTATION DEVELOPED TO GREATER INTENSITY. THESE WERE ALL LOCATED IN THE VICINITY OF WEAVERVILLE AND THEY DENOTED THE CENTER OF GREATEST ACTIVITY. MADRONA WAS THE FAVORED HOST OF THE SEASON BUT ALDER, WILLOW, OAK AND MAPLE WERE ATTACKED AS WELL. DEFOLIATION WAS SEVERE WHERE EPIDEMIC CONDITIONS PREVAILED BUT VERY LITTLE PERMANENT DAMAGE TO THE HOSTS RESULTED.

ESTIMATED BARKBEETLE LOSSES BY SUBREGIONS

KLAMATH NATIONAL FOREST

KLAMATH RIVER DRAINAGE: CURRENT BARKBEETLE LOSSES IN THE UPPER KLAMATH RIVER DRAINAGE WILL AVERAGE ABOUT 25 TREES PER SECTION, OR 31 BOARD FEET PER ACRE. LOCAL AREAS INCLUDE THE BEAVER CREEK, BARKHOUSE, AND MCKINNEY CREEK WATER SHEDS, AND THE DOGGETT RIDGE. THE INFESTATION IS FAIRLY UNIFORM ON ALL THESE AREAS AND IS LARGELY COMPOSED OF THE WESTERN PINE BEETLE IN PONDEROSA PINE. THE CURRENT LOSS IS MUCH LESS THAN THAT OF PRECEDING YEARS. THERE IS NO EVIDENCE OF EARLY INCREASE.

LOSSES IN THE LOWER KLAMATH RIVER SECTION, IN SEIAD AND ORLEANS AREAS, ARE EVEN LESS AND WILL NOT AVERAGE MORE THAN 15 TREES PER SECTION.

Scott River Drainage: Losses in this section are approximately the same as in the upper Klamath River area, averaging 25 trees per section, or 31 board feet per acre. The infestation is of the same character in these scattered ponderosa pine stands. It has shown a tendency to concentrate along the Scott River west of Fort Jones. Throughout Scott Valley and on the bordering heights losses are negligible with only an occasional attacked tree on the more exposed sites.

Shasta Forest

The area lying between Callahan and Trinity Center is practically free of infestation. A few red trees were visible on exposed sites, principally along the ridge tops. These will not average more than 5 trees per section. This low infestation largely consists of western pine beetle broods in ponderosa pine. An occasional sugar pine in this section has been killed by the mountain pine beetle. Many dead snags attest former activity of bark-beetles, showing that current infestations are lower than in past years.

Trinity Forest

Upper Trinity River Basins: Infestations in the Trinity Alps region are somewhat higher than elsewhere in this forest but they will not exceed 30 trees per section. Due to larger timber the loss per acre will run about 56 board feet. It is largely confined to ponderosa pine although some sugar pine is affected as well.

Hayfork: In the Hayfork Valley and tributary drainage basins the current loss is about 20 trees per section but becomes much less to the south through the country around Wildwood and Plummer Peak. Losses in this area are confined to ponderosa pine and are caused by the western pine beetle, Ips, and flatheads, in combination or separately.

Lower Trinity River: The timber stands in this subregion are scattered and intermittent and are composed of ponderosa pine and Douglas fir mixed with oak and other broadleaf species. Barkbeetle infestations are insignificant and resultant damage negligible. The defoliator Halisodota argentata was active during the season throughout the area concentrating its attacks on Douglas fir along New River. This infestation was discussed under "General Infestation Conditions".

Mendocino Forest

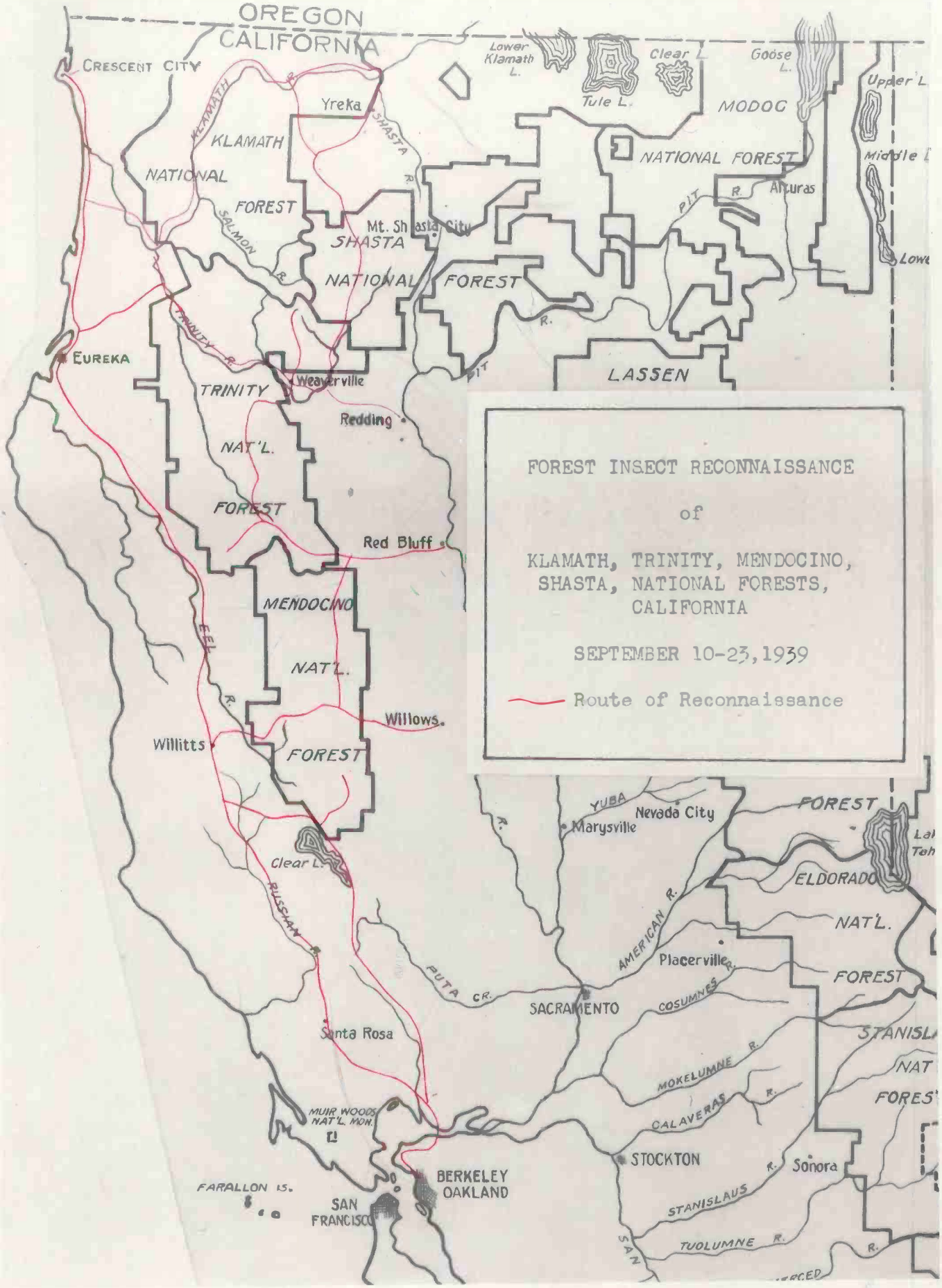
East Side Areas: A high normal infestation is present in the fringe stands of ponderosa pine along the east flank of the forest as far south as Paskenta but it does not extend far back into the better site stands. The infestation in this fringe belt will average 25 trees per section, or about 15 board feet per acre. It is confined to ponderosa pine and has resulted from combined attacks of the western pine beetle, Ips, and flatheads.

North Central Areas: The interior region extending from Alder Springs to Hammerhorn Mountain is remarkably free of infestation.

Southern Areas: The Deer Creek and Bear Creek drainage basins in the southern tip of the forest have been more susceptible to beetle attack. Here the current loss will average 30 trees per section, or 35 board feet per acre. It is largely confined to the ridges and exposed sites.

The current infestation between these areas and Alder Springs is negligible and without indications of early increase.

In summation it can be definitely stated that the current bark-beetle infestations in this entire region are well below normal, with a pronounced decline since 1936 when the last previous reconnaissance was made. In no part of the region are these infestations of sufficient magnitude, or damaging, to warrant control action.


OREGON
CALIFORNIA
CRESCENT CITY
Yreka
KLAMATH
NATIONAL
FOREST
SALMON R.
KLAMATH R.
SHASTA R.
Mt. Shasta City
SHASTA
NATIONAL
FOREST
Lower Klamath L.
Tule L.
Clear L.
Goose L.
MODOC
NATIONAL FOREST
Upper L.
Middle L.
Lowe
PIT R.
Alturas
LASSEN
EUREKA
TRINITY R.
Weaverville
TRINITY
NAT'L.
FOREST
Redding
Red Bluff
MENDOCINO
NAT'L.
FOREST
EEL R.
Willits
Willows
Clear L.
RUSSIAN R.
Santa Rosa
MUIR WOODS NAT'L. MON.
FARALLON IS.
SAN FRANCISCO
BERKELEY
OAKLAND
PUTA CR.
SACRAMENTO
YUBA R.
Marysville
Nevada City
FOREST
ELDORADO
NAT'L.
FOREST
AMERICAN R.
Placerville
COSUMNES R.
MOKELUMNE R.
CALAVERAS R.
STOCKTON
Sonora
STANISLAUS R.
TUOLUMNE R.
SAN
FORCED R.
FOREST INSECT RECONNAISSANCE
of
KLAMATH, TRINITY, MENDOCINO,
SHASTA, NATIONAL FORESTS,
CALIFORNIA
SEPTEMBER 10-23, 1939
Route of Reconnaissance

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